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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/045,559	01/11/2002	Michael G. Fitzpatrick	RSW920010160US1	1823
7590	03/23/2006		EXAMINER	
Jerry W. Herndon IBM Corporation T81/503 PO Box 12195 Research Triangle Park, NC 27709			NG, CHRISTINE Y	
			ART UNIT	PAPER NUMBER
			2616	

DATE MAILED: 03/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/045,559	FITZPATRICK ET AL.	
	Examiner Christine Ng	Art Unit 2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 11 January 2002.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-15 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 11 January 2002 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                        |                                                                             |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | Paper No(s)/Mail Date. _____                                                |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|                                                                                                                        | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claims 3, 9 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 recites the limitation "the inbound packet header" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "the inbound packet header" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 13 recites the limitation "the inbound packet header" in line 3. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,049,834 to Khabradar et al in view of U.S. Patent No. 6,948,003 to Newman et al.

Referring to claim 1, Khabradar et al disclose in Figures 1 and 3 a method of

improving data transfer in a computing network, comprising steps of:

Receiving one or more packets to be routed to or from a plurality of *ports* (ports 12-1 to 12-N). Refer to Column 2, lines 56-65.

Providing an internal routing table (L2 forwarding table) for data link layer routing, wherein entries in the internal routing table are learned dynamically while processing the received packets. Upon receiving packets: "If the source address is not known to the switch, or it is associated with a port of entry which is no longer current, it is added or updated in step 60." (Column 3, lines 58-61). Also, changes in network topology are accommodated by updating entries in the forwarding table. Refer to Column 5, lines 1-10.

Khabradar et al do not disclose that the packets are received from a plurality of *virtual servers*.

Newman et al disclose in Figure 3 a private virtual server system 300 that sends traffic from a plurality of virtual servers 362a, 362b and 362c for transmission across local/regional network 340 to customers 310, 320 and 330. Refer to Column 8, lines 22-65. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the packets are received from a plurality of *virtual servers*. One would be motivated to do so since Khabardar et al do not disclose a source to provide data to the ports 12-1 to 12-N; a virtual server is a source to provide data to the ports for further routing through the network.

Using the internal routing table for routing the received packets. Refer to Column 3, line 48 to Column 4, line 20.

Referring to claims 2, 8 and 12, Khabradar et al disclose a method of improving data transfer in a communications network, the method comprising steps of:

Routing packets of the traffic (Figure 1, from ports 12-1 to 12-N), further comprising the steps of:

Intercepting packets of the traffic at a data link layer (Figure 1, using L2 forwarding table) of a communications protocol stack.

Comparing (Figure 4, step 57) a destination address of each intercepted packet to entries in a data link layer routing table (Figure 3, L2 forwarding table). The destination address of the packet is compared to entries in the L2 forwarding table to see if it is an address of a router.

Forwarding (Figure 4, steps 59 and 61) the intercepted packet to a higher layer (Figure 3, using L3 shortcut table) of the communications protocol stack if no matching entry is found by the comparing step, for routing by the higher layer. If the destination address of the packet is a router, the packet is forwarded using the L3 shortcut table of the network layer. Refer to Column 4, lines 10-20.

Performing (Figure 4, steps 58, 60, 62, 64, 66, 68, 70 and 72) data link layer routing of the intercepted packet, without intervention of the higher layer, if a matching entry is found by the comparing step. If the destination address of the packet is not a router, the packet is forwarded to all ports except the port of entry (step 64), filtered (step 70), or forwarded to a specified port (step 72), which is all done by the L2 forwarding table of the data link layer.

Khabradar et al do not disclose providing a concentrator that combines traffic

from a plurality of virtual servers into a single outbound stream.

Newman et al disclose in Figure 3 a private virtual server system 300 that includes a concentrator (multiplexer/demultiplexer 350) that combines traffic from a virtual servers 362a, 362b and 362c for transmission across local/regional network 340. The multiplexing/demultiplexing mechanism 350 performs the function of “merging multiple separate communication streams onto a single physical communications medium.” Refer to Column 4, lines 32-53 and Column 8, lines 55-65. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include providing a concentrator that combines traffic from a plurality of virtual servers into a single outbound stream. One would be motivated to do so since Khabardar et al do not disclose a source to provide data to the ports 12-1 to 12-N; a virtual server is a source to provide data to the ports for further routing through the network. A concentrator is necessary to combine data from a plurality of virtual servers for transmission to a port of the router for entrance to the network.

Referring to claims 3, 9 and 13, Khabradar et al disclose that the step of performing data link layer routing further comprises the steps of:

Replacing the inbound packet header of the intercepted packet with an outbound packet header using information from the matching entry, thereby creating a modified packet header.

Forwarding the intercepted packet using the modified packet header. When the layer 2 destination address is that of a router, and a layer 3 address match is found in the layer 3 shortcut table, “the switch must rewrite the packet source and destination

layer 2 addresses, and then forward the packet to the port shown in column 50...".

Refer to Column 4, lines 10-20. Refer also to Figure 5d and Column 5, lines 56-67.

Referring to claims 4, 10 and 14, Khabradar et al disclose that the entries in the data link layer routing table are dynamically learned. Upon receiving packets: "If the source address is not known to the switch, or it is associated with a port of entry which is no longer current, it is added or updated in step 60." (Column 3, lines 58-61). Also, changes in network topology are accommodated by updating entries in the forwarding table. Refer to Column 5, lines 1-10.

Referring to claims 5, 11 and 15, Khabradar et al do not disclose that one or more of the virtual servers are application servers.

Newman et al disclose in Figure 3 a private virtual server system 300 that includes a plurality of virtual servers 362a, 362b and 362c. Refer to Column 8, lines 22-65. The virtual servers 362a, 362b and 362c are application servers since they are part of the private virtual server system 300, and an example of a service provider is an Application Service Provider. Refer to Column 2, lines 12-20. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that one or more of the virtual servers are application servers. One would be motivated to do so in order to provide application services to users.

Referring to claim 6, Khabradar et al do not disclose that the virtual servers each operate in a logical partition within a single computer device.

Newman et al disclose in Figure 3 that each of the virtual servers 362a, 362b and 362c operate in a logical partition within physical server 360. Refer to Column 8, lines

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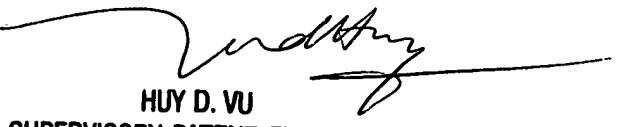
44-54. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the virtual servers each operate in a logical partition within a single computer device. One would be motivated to do so in order to provide a plurality of logical virtual servers within a single server; thereby allowing the virtual servers to share the resources of the network.

Referring to claim 7, Khabradar et al disclose in Figure 3 that the method further comprises the step of deleting selected entries from the data link layer routing table (L2 forwarding table) when the selected entries become obsolete. "With the passage of time, entries are periodically deleted from the forwarding table, starting with the oldest entries." (Column 5, lines 2-4).

### ***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Ng whose telephone number is (571) 272-3124. The examiner can normally be reached on M-F; 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



HUY D. VU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C. Ng (s)  
March 7, 2006